

Lab Status/ AEM Meeting Notes

Monday May 15, 2017

<https://indico.fnal.gov/conferenceDisplay.py?confId=14531>

Incidents:

- An FESS employee reported stiffness in his back after changing 12 air handling unit filters over two days. Restrictions from his personal physician make this case recordable.
- An FESS employee stepped off the back of a box truck while maneuvering a loaded pallet jack for unloading. The load remained on the truck, but the employee fell to the driveway. First aid.
- An ND user suffered a laceration to his right hand/thumb when the torque wrench he was using slipped and contacted a nearby sharp edge. The user was wearing gloves at the time of the injury. He was transported to the hospital where his injury was cleaned and treated.
- An experimenter at the test beam's high rate tracking area at M03 got scratched on her leg on a bolt while stepping over a pipe. She was checked by radiation safety. First aid only, and the protruding bolt was covered.

Accelerator Operations:

- Linac, Booster running well, but MI52 vacuum problems continue. Some beam time lost.
- NuMI: 1.64E19 POT; BNB: 1.15E19 POT.
- 145 hours of beam to SeaQuest, 70 hours to MTest, 130 hours to MCenter for LArIAT.
- Muon Campus commissioning: Going well. 3 GeV secondaries into the ring.
- Future schedule: <http://www-ad.fnal.gov/ops/schedule.html>
- Downtime today (this morning) for ComEd switch 2002 repair. Another outage at 17:00. Turn on begins at 18:00.
- PIP-II Injector test: 4th week of 6-10 week shutdown.
- FAST: 300 MeV beamline upgrade continues.
- CMTS1: LCLS-II proto-type CM being tested. Currently off due to planned power outage today. Expect to cool down by Tuesday; resume operation and complete testing by end of the week.

MicroBooNE:

- Running well. DAQ uptime 93.5% for the week. POT delivered: 1.14E19, recorded: 1.07E19.
- Computing: Job success rate 83%; CPU eff 76%.
- Lightning damage to modules in MI12 on Wednesday night disabled BES signal and the problem not caught until Thursday morning. 12 hours of BNB triggers lost. Evaluating improvements to avoid such problems in the future.
- Detector currently off due to outages today; will power up this evening.

MINERvA:

- Uptime 96.8%, with MINOS ND 95.6%; POT delivered = 1.57E19 (May 4 - 10).
- Computing job success rate 86%, CPU efficiency 51%, low due to MINOS DB not being able to handle too many jobs.

NOvA:

- POT-weighted Uptimes: 98.1% for FD and 99.4% for ND (Last 4 weeks)
- Computing: job success rate 77%, CPU efficiency 33%. Poor eff due to storage issues and later in the week due to jobs submitted to OSG site. Following up. High-volume FD cosmic dataset processing last week.

SeaQuest:

- Drift Chamber 1 tripped Saturday night; investigating. Other detectors ok. Lost LH2 target due to power outage, will refill tomorrow.

g-2:

- Good week.
- Final push on installation. Installing shielding this week and cabling of remaining calorimeters and auxiliary detectors.

PPD Operations:

- Test beam
 - o MCenter: LArIAT continues to take beam. Will look at changing wire planes towards the end of May.
 - o MTest: Currently, CMS outer tracker, CMS HGCal, CMS timing, and a DUNE test project are installed and taking data together. These groups will remain until Memorial Day weekend. After that, Mu2e has a run scheduled, followed by ICECube.
 - o The test beam is now taking scheduling requests for FY18.
- Mu2e
 - o Accelerator: Completed the Construction Readiness Review for the Extinction Monitor
 - o Solenoids: GA is able to bend PS conductor to the right radius. Still need to adjust insulator wrapping heads to complete the test of bending fully insulated conductor.
 - o Tracker panel construction completed last week. Pressure test to be started today. Vacuum test later in the week.
 - o There was a safety review of the CRV electronics design.
 - o Mu2e building is now locked, with ID entry active.
- CMS
 - o LHCC meeting last week at CERN. LHC is planning to deliver to ATLAS/CMS 90 fb-1 in 2017+2018 and 2017 stable beams are expected within 1-2 weeks. LHCC is planning to review 9 TDRs for HL-LHC this year (half of them CMS).
- CMS Phase 1
 - o Preparing for HCAL Barrel testbeam in July.
 - o First draft of closeout document also due in July
- CMS Phase 2
 - o Received final report from NSF pre-PDR review April 12-13; following up on the (smallish) issues.
 - Continuing OPSS reviews of sub-projects in order to get the entire NSF scope into the same shape as muons (which were reviewed as part of the pre-PDR)
 - o CD-1 IPR will be delayed — perhaps to early CY 2018. We don't expect to have a project profile from DOE before September.
 - o NSF Preliminary Design Review (PDR) for the full NSF project December, 2017 (this date remains unchanged)
 - o Muon on-chamber electronics will be installed during LS2 (2019-2020) and funded using a directed stream of money through the operations program.
- SCDMS SnoLab
 - o Two SNOLAB staff will be at Fermilab tomorrow for working meetings concerning items we intend to start deploying at SNOLAB this year. These are infrastructure items like piping, cranes, clean room, etc.
- Electrical Engineering
 - o ASIC Group
 - Placed an order for 6 wafers for the VIPRAM project
 - Got a quote from CERN-IMEC for the submission for the CDP1 project (DUNE ColdData Prototype). MOSIS could not provide service that we require). Awaiting approval from DUNE for submission.

- The 4-way TSMC-MOSIS-FNAL-SLAC NDA for the FLORA project got signed by the labs and was sent to MOSIS for its execution.
 - Getting very interesting results from the cryocooler- saw the ADCs being tested start to fail at high SCLK frequency but not at lower frequency.

ND Operations:

- DUNE: FY17 appropriations at \$50M, and disbursement to the Lab expected this week. All discretionary spending being carefully monitored. This is collaboration meeting week at the Lab.
- SBN: Installation of SBND warm vessels making good progress. Techs from CERN, INFN and Fermilab are working well together on the ICARUS project.

LBNF Project:

- No report.

TD Operations:

- LCLS-II: Quad SPQA105 shipped to MP9 for assembly; SPQA106 cold test in progress. CM02-CM07 in various stages of assembly and testing.
- LARP: Work continues on the first 4.2 m long coil quad QXFA101 continues. Short model ready for cool down with increased axial pre-stress. LARP Director's review in June, followed by Cd1.
- Accelerator Services: MI spare Lambertson (MLAW) delivered to AD for residual gas analysis. LBNF kicker assembly in process, all parts delivered after 1-year delay for the ferrites.
- PIP-II: One spoke cavity horizontal test assembly in progress in STC test cave. Inspection/Tests of 650-MHz single-cell and 5-cell cavities in progress. Resonance control test in progress.
- Mu2e: Making steady progress on the TS coil module test at the HAB facility.
- g-2: Inflector conductor fully insulated; winding tooling in place. Prep for testing samples of NbTi shielding.
- 15T Dipole R&D: ROXIE and FEA modeling with stress management continue for 15T dipole. All 4 layers wound for coil No. 1, preparation to cure the coil is in progress.

Computing Operations:

CCD:

- Good week.
- Security blocked mailchimp as per DOE instructions. This blocks Fermi Today images for off-site users.
- Ransomware cyber issue on Windows machines: Most of the machines have the patch applied, except for 14 machines. Trying to get those updated.

SCD:

- FIFE: Better IF (m2e) usage of CMS empty slots.
- Other operations normal.

Office of Communication:

- There will be screening of Ph.D. Comics movie Friday afternoon in the atrium. Public lecture by Jorge Cham and Daniel Whiteson that evening. Tickets are still available.
- This Friday is the deadline for registration for the 50th anniversary symposium and the users meeting.

Directorate:

- g-2 has requested 2 week delay in the starting date for the accelerator shutdown. Directorate working on it. Decision to come soon.